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Association is not alone in facing this situation, for it has presented serious problems to great organizations like the American Society of Civil Engineers.

Carleton E. Davis.

## THE OPERATION OF SMALL PURIFICATION PLANTS

The consulting engineer who designs a water purification plant for the average small city should have a cheerful disposition and an optimistic outlook. Without these attributes he is likely to feel disappointed, or even bitter, at the treatment which this child of his brain will receive at the hands of the guardians to whose care its management is assigned. In Illinois we are now giving serious attention to the operation of the plants for treating water and sewage, because it leaves much to be desired in some cases, and there is evident need of arousing an interest among public officials generally in the desirability of competent control of such works. There is an unfortunate inclination to look upon them like tractors or trucks, as something which will work all right if the proper lubricant is occasionally squirted in the oil cups that can be reached easily.

We are beginning to encourage a policy of doing more than merely relying on the treatment of water as a safeguard against the pollution of municipal supplies. Purification plants owned by small cities cannot have the staff of trained experts to supervise their operation which a large plant possesses. There is a greater hazard or risk inevitable in the small plants and provision ought to be made against the extra hazard if it is practicable to do so. Life is just as valuable to the resident in a place of five thousand as to the resident in a metropolis, and therefore we should try to place about each of them sanitary safeguards of equal effectiveness. So in Illinois we are now attempting to persuade municipalities installing new water supplies to acquire control over the tributary watershed where this is practicable, and in all cases to maintain a watershed patrol which will reveal promptly any source of dangerous contamination of the water.

As a further step in improving the management of small plants for treating water and sewage, the State Department of Public Health is encouraging the practice of retaining the services of a consulting engineer on an annual-fee basis to supervise the operation of such works. The service needed can be rendered for a very small fee in most cases, and the plan is not only a great benefit to the municipality having such advice but is also of value to the engineer in giving him an opportunity to observe the operation of the plants he designs. Under conditions heretofore prevailing the engineer rarely sees the plants he designs after their completion and preliminary test runs, and even in the case of such runs he usually contributes his time and pays his expenses for the visit. In this respect the small works offer a great contrast to the large plants, yet it is the small works which need the supervision of their designer most. We are so certain of the benefits that will follow from the adoption of the policy outlined that we expect to take over before long the systematic control of a small string of works for treating water and sewage, in order to show by practical demonstration what can be accomplished by expert supervision and thus establish the value of expert advice to municipalities owning small plants of this nature.

PAUL HANSEN.

## IS MORE MECHANICAL ENGINEERING SKILL NEEDED BY THE WATERWORKS FRATERNITY?

In a recent conversation with a mechanical engineer a remark was made that many of the mechanical appliances used by water works men were crude, from a mechanical view point, and the opinion was voiced that the mechanical engineer could do much to improve such appliances. The writer is inclined to assent, in part at least, to the correctness of this view and is interested in learning what are the opinions of his fellow water works managers.

Water supply has been considered a civil engineer's specialty, and the mechanical engineer is generally only brought in as an expert for some pumping problem. It is seldom that adequate provision is made for a mechanical engineering force, even in our largest systems, although there are many important mechanical engineering problems to be handled in both maintenance and construction work. The water works field does not attract mechanical engineers, as they consider that the opportunities it offers are too limited to be inviting. The civil engineer is inclined to think he can do the mechanical part in a reasonably efficient manner, and does not willingly call on his mechanical brother. It would be helpful if more mechanical engineering skill were devoted to the water supply work, and we should all encourage and welcome the mechanical men to join in advancing the water supply art.